

1. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{169}{0}} + \sqrt{60}i$$

- A. Irrational
  - B. Not a Complex Number
  - C. Pure Imaginary
  - D. Rational
  - E. Nonreal Complex
- 

2. Simplify the expression below and choose the interval the simplification is contained within.

$$8 - 1 \div 20 * 5 - (4 * 13)$$

- A.  $[59.76, 60.65]$
  - B.  $[48.71, 49.16]$
  - C.  $[-44.2, -43.15]$
  - D.  $[-44.61, -44.11]$
  - E. None of the above
- 

3. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(-6 - 2i)(8 - 9i)$$

- A.  $a \in [-70, -63]$  and  $b \in [38, 47]$
- B.  $a \in [-51, -47]$  and  $b \in [17, 20]$
- C.  $a \in [-33, -26]$  and  $b \in [-77, -66]$
- D.  $a \in [-70, -63]$  and  $b \in [-43, -36]$
- E.  $a \in [-33, -26]$  and  $b \in [68, 77]$

4. Simplify the expression below and choose the interval the simplification is contained within.

$$15 - 11^2 + 3 \div 10 * 7 \div 12$$

- A.  $[135.9, 136.06]$
  - B.  $[-105.89, -105.76]$
  - C.  $[-106.13, -105.98]$
  - D.  $[136.12, 136.33]$
  - E. None of the above
- 

5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{484}} + \sqrt{10}i$$

- A. Rational
  - B. Not a Complex Number
  - C. Nonreal Complex
  - D. Irrational
  - E. Pure Imaginary
- 

6. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{63 + 33i}{8 - 5i}$$

- A.  $a \in [7.45, 7.55]$  and  $b \in [-1, 0]$
- B.  $a \in [3.7, 4.4]$  and  $b \in [5.5, 7.5]$
- C.  $a \in [3.7, 4.4]$  and  $b \in [578.5, 580.5]$

- D.  $a \in [7.85, 7.95]$  and  $b \in [-7, -6]$   
E.  $a \in [338.9, 339.05]$  and  $b \in [5.5, 7.5]$
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7. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(2 - 5i)(-9 + 3i)$$

- A.  $a \in [-5, 4]$  and  $b \in [-56, -44]$   
B.  $a \in [-22, -15]$  and  $b \in [-17, -13]$   
C.  $a \in [-35, -31]$  and  $b \in [38, 47]$   
D.  $a \in [-5, 4]$  and  $b \in [49, 52]$   
E.  $a \in [-35, -31]$  and  $b \in [-46, -31]$
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8. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{15}{0}}$$

- A. Not a Real number  
B. Irrational  
C. Rational  
D. Integer  
E. Whole
- 

9. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{-54 + 88i}{7 + 5i}$$

- A.  $a \in [0, 1]$  and  $b \in [884.5, 886.5]$

- B.  $a \in [-9, -7]$  and  $b \in [16.5, 18]$
  - C.  $a \in [-12, -10.5]$  and  $b \in [4, 6]$
  - D.  $a \in [60.5, 63]$  and  $b \in [11, 13]$
  - E.  $a \in [0, 1]$  and  $b \in [11, 13]$
- 

10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{1760}{10}}$$

- A. Integer
  - B. Not a Real number
  - C. Irrational
  - D. Whole
  - E. Rational
- 

11. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-2380}{0}} + \sqrt{63}$$

- A. Nonreal Complex
  - B. Not a Complex Number
  - C. Rational
  - D. Pure Imaginary
  - E. Irrational
- 

12. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 2 \div 9 * 20 - (5 * 15)$$

- A.  $[-75.01, -72.01]$
  - B.  $[-126.67, -123.67]$
  - C.  $[71.99, 82.99]$
  - D.  $[-83.44, -77.44]$
  - E. None of the above
- 

13. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(5 - 2i)(8 + 10i)$$

- A.  $a \in [59, 63]$  and  $b \in [-40, -32]$
  - B.  $a \in [59, 63]$  and  $b \in [31, 37]$
  - C.  $a \in [15, 22]$  and  $b \in [65, 71]$
  - D.  $a \in [39, 44]$  and  $b \in [-21, -19]$
  - E.  $a \in [15, 22]$  and  $b \in [-70, -57]$
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14. Simplify the expression below and choose the interval the simplification is contained within.

$$6 - 18^2 + 17 \div 11 * 5 \div 10$$

- A.  $[-318.23, -317.26]$
  - B.  $[329.64, 330.72]$
  - C.  $[330.23, 331.02]$
  - D.  $[-317.26, -317.09]$
  - E. None of the above
-

15. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{1560}{8}} + 7i^2$$

- A. Rational
  - B. Nonreal Complex
  - C. Pure Imaginary
  - D. Not a Complex Number
  - E. Irrational
- 

16. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{63 + 44i}{6 + 5i}$$

- A.  $a \in [1.9, 3.1]$  and  $b \in [9, 11]$
  - B.  $a \in [9.6, 9.85]$  and  $b \in [-51.5, -50]$
  - C.  $a \in [9.6, 9.85]$  and  $b \in [-2.5, 0]$
  - D.  $a \in [597.5, 598.55]$  and  $b \in [-2.5, 0]$
  - E.  $a \in [10.25, 10.9]$  and  $b \in [8, 9]$
- 

17. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(-3 - 10i)(8 + 5i)$$

- A.  $a \in [23, 31]$  and  $b \in [87, 103]$
- B.  $a \in [23, 31]$  and  $b \in [-99, -90]$
- C.  $a \in [-74, -70]$  and  $b \in [-69, -60]$
- D.  $a \in [-26, -16]$  and  $b \in [-50, -48]$

E.  $a \in [-74, -70]$  and  $b \in [64, 66]$

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18. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{8100}{25}}$$

- A. Rational
  - B. Irrational
  - C. Not a Real number
  - D. Whole
  - E. Integer
- 

19. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{27 + 44i}{-2 - i}$$

- A.  $a \in [-15, -13]$  and  $b \in [-44.5, -43.5]$
  - B.  $a \in [-20.5, -17.5]$  and  $b \in [-13, -11.5]$
  - C.  $a \in [-99, -97.5]$  and  $b \in [-13, -11.5]$
  - D.  $a \in [-20.5, -17.5]$  and  $b \in [-62.5, -60]$
  - E.  $a \in [-2.5, -1.5]$  and  $b \in [-23.5, -22]$
- 

20. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{40000}{100}}$$

- A. Rational
- B. Irrational

- C. Integer
  - D. Not a Real number
  - E. Whole
- 

21. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{144}} + \sqrt{4}i$$

- A. Rational
  - B. Not a Complex Number
  - C. Nonreal Complex
  - D. Pure Imaginary
  - E. Irrational
- 

22. Simplify the expression below and choose the interval the simplification is contained within.

$$19 - 11^2 + 20 \div 7 * 13 \div 17$$

- A.  $[141, 142.7]$
  - B.  $[-104.1, -101.6]$
  - C.  $[136.5, 141.4]$
  - D.  $[-100.3, -98.1]$
  - E. None of the above
- 

23. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(8 + 6i)(2 + 3i)$$

- A.  $a \in [-12, -1]$  and  $b \in [-45, -33]$



- B.  $a \in [33, 39]$  and  $b \in [9, 15]$
  - C.  $a \in [14, 21]$  and  $b \in [17, 23]$
  - D.  $a \in [33, 39]$  and  $b \in [-13, -3]$
  - E.  $a \in [-12, -1]$  and  $b \in [35, 40]$
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24. Simplify the expression below and choose the interval the simplification is contained within.

$$19 - 9^2 + 8 \div 5 * 4 \div 20$$

- A.  $[-61.93, -61.53]$
  - B.  $[100, 100.05]$
  - C.  $[-62.15, -61.94]$
  - D.  $[100.18, 100.45]$
  - E. None of the above
- 

25. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{\sqrt{65}}{18} + \sqrt{-2}i$$

- A. Nonreal Complex
  - B. Not a Complex Number
  - C. Pure Imaginary
  - D. Rational
  - E. Irrational
- 

26. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{-72 - 55i}{-7 + 3i}$$

- A.  $a \in [11, 12]$  and  $b \in [1.5, 3]$
  - B.  $a \in [4.5, 7.5]$  and  $b \in [600.5, 602.5]$
  - C.  $a \in [338.5, 339.5]$  and  $b \in [9.5, 12]$
  - D.  $a \in [10, 11.5]$  and  $b \in [-19, -17.5]$
  - E.  $a \in [4.5, 7.5]$  and  $b \in [9.5, 12]$
- 

27. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$(3 - 10i)(-5 + 8i)$$

- A.  $a \in [63, 66]$  and  $b \in [72, 75]$
  - B.  $a \in [-17, -12]$  and  $b \in [-84, -79]$
  - C.  $a \in [63, 66]$  and  $b \in [-74, -69]$
  - D.  $a \in [-102, -92]$  and  $b \in [24, 29]$
  - E.  $a \in [-102, -92]$  and  $b \in [-31, -22]$
- 

28. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{121}{324}}$$

- A. Integer
  - B. Whole
  - C. Rational
  - D. Not a Real number
  - E. Irrational
-

29. Simplify the expression below into the form  $a + bi$ . Then, choose the intervals that  $a$  and  $b$  belong to.

$$\frac{36 - 88i}{2 + i}$$

- A.  $a \in [17.5, 18.5]$  and  $b \in [-89, -87]$
  - B.  $a \in [-4.5, -2]$  and  $b \in [-213, -211]$
  - C.  $a \in [31, 33.5]$  and  $b \in [-29.5, -27.5]$
  - D.  $a \in [-4.5, -2]$  and  $b \in [-43, -41.5]$
  - E.  $a \in [-16.5, -15.5]$  and  $b \in [-43, -41.5]$
- 

30. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{3600}{36}}$$

- A. Irrational
  - B. Whole
  - C. Integer
  - D. Not a Real number
  - E. Rational
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